

AMENDMENTS TO THE CLAIMS

1. - 27. (Cancelled)

28. (New) A continuous processing apparatus for plasma polymerization which comprises:

a source roller for unwinding a metallic substrate;

at least one vertical polymerization chamber for continuously receiving the metallic substrate from the source roller, said vertical chamber having at least one gas inlet for introducing a plasma gas into the vertical chamber and having at least one tension roller operatively connected to the source roller for directing the metallic substrate through the chamber while maintaining a predetermined tension;

a terminal roller operatively connected to said tension roller for receiving the metallic substrate from the vertical chamber;

at least one electrode disposed within the vertical polymerization chamber adjacent to the metallic substrate; and

an electrical power supply electrically connected to said metallic substrate for generating electric current,

wherein, upon generation of electric current by the power supply, a plasma for deposition upon the surface of the metallic

substrate is formed by the plasma gas together with the electrode and the metallic substrate which serves as a counter electrode.

29. (New) The continuous processing apparatus for plasma polymerization of claim 28, wherein said at least one vertical polymerization chamber includes two electrodes disposed so as to face opposite sides of the metallic substrate.

30. (New) The continuous processing apparatus for plasma polymerization of claim 29, wherein the apparatus includes two or more vertical polymerization chambers.

31. (New) The continuous processing apparatus for plasma polymerization of claim 28, which further comprises a horizontal chamber through which the metallic substrate is directed.

32. (New) The continuous processing apparatus for plasma polymerization of claim 28, wherein said at least one vertical polymerization chamber includes at least one gas outlet for removing plasma gas from the vertical chamber which is introduced by said at least one gas inlet, wherein the plasma gas is directed

to flow from the gas inlet to the gas outlet in the same direction or in the opposite direction of the metallic substrate.

33. (New) The continuous processing apparatus for plasma polymerization of claim 28, wherein said at least one vertical polymerization chamber includes at least one gas outlet for removing plasma gas from the vertical chamber which is introduced by said at least one gas inlet, wherein the plasma gas is directed to flow from the gas inlet to the gas outlet perpendicular to the direction of the metallic substrate.

34. (New) The continuous processing apparatus for plasma polymerization of claim 28, wherein said apparatus includes two vertical polymerization chambers disposed adjacent to each other and four or more tension rollers operatively connected to the source roller and terminal roller, which direct the metallic substrate sequentially into a lower portion of a first vertical polymerization chamber, up to a higher portion of the first vertical polymerization chamber, into an adjacent higher portion of a second vertical polymerization chamber, and down to a lower portion of said second vertical polymerization chamber.

35. (New) A continuous processing apparatus for plasma polymerization which comprises:

a source roller for unwinding a metallic substrate;

two or more vertical polymerization chambers are disposed adjacently, wherein a first vertical chamber has at least two tension rollers operatively connected to a source roller for receiving therein and directing a metallic substrate through the first chamber while maintaining a predetermined tension, and wherein a second vertical polymerization chamber includes at least two tension rollers operatively connected to a tension roller in the first chamber, wherein the tension rollers in the second chamber receive the metallic substrate therein and direct the metallic substrate out of the second chamber to a terminal roller which winds the metallic substrate;

electrodes disposed within the vertical polymerization chambers so as to oppose the surfaces of the metallic substrate;

gas inlets for introducing a plasma gas, and gas outlets for removing plasma gas disposed in said vertical polymerization chambers, wherein the gas is directed to flow in a parallel or anti-parallel direction with respect to the metallic substrate direction, or is directed to flow in a direction perpendicular to the direction of the metallic substrate; and

an electrical power supply electrically connected to said metallic substrate for generating electric current,

wherein, upon generation of electric current by the power supply, a plasma for deposition upon the surface of the metallic substrate is formed by the plasma gas together with the electrode and the metallic substrate which serves as a counter electrode.

36. (New) The continuous processing apparatus for plasma polymerization of claim 35, wherein said vertical polymerization chambers include two electrodes disposed so as to face opposite sides of the metallic substrate.

37. (New) The continuous processing apparatus for plasma polymerization of claim 36, wherein the apparatus includes more than two vertical polymerization chambers.

38. (New) The continuous processing apparatus for plasma polymerization of claim 35, which further comprises a horizontal chamber through which the metallic substrate is directed.

39. (New) The continuous processing apparatus for plasma polymerization of claim 35, wherein said apparatus includes two

vertical polymerization chambers disposed adjacent to each other and four or more tension rollers operatively connected to the source roller and terminal roller, which direct the metallic substrate sequentially into a lower portion of a first vertical polymerization chamber, up to a higher portion of the first vertical polymerization chamber, into an adjacent higher portion of a second vertical polymerization chamber, and down to a lower portion of said second vertical polymerization chamber.